CLAIMS

What is claimed is:

1. A method for controlling the recording of diagnostic data within an implantable medical device, the method comprising:

evaluating the likelihood that one or more circumstances will arise; and

controlling the recording of diagnostic data based upon such an evaluation.

2. The method of claim 1 wherein evaluating the likelihood that one or more circumstances will arise is performed to identify periods of time wherein there is an elevated risk of an arrhythmia and wherein controlling the recording of diagnostic data is performed to record the data at least temporarily during the period of time wherein there is an elevated risk of an arrhythmia.

3. The method of claim 2 wherein identifying periods of time wherein there is an elevated risk of an arrhythmia is performed by monitoring heart rate variability and identifying periods of time with reduced heart rate variability.

4. The method of claim 2 wherein identifying periods of time wherein there is an elevated risk of an arrhythmia is performed to identify periods of time wherein there is an elevated risk of ventricular fibrillation.

5. The method of claim 4 wherein identifying periods of time wherein there is an elevated risk of ventricular fibrillation is performed by detecting an episode of ventricular tachycardia and designating a predetermined period of time subsequent to the episode of ventricular

tachycardia as being a period of time with elevated risk of ventricular fibrillation.

6. The method of claim 5 wherein controlling the recording of diagnostic data comprises:

activating the recording of diagnostic data in a temporary memory upon detection of an episode of ventricular tachycardia; and

deactivating the recording of diagnostic data only if no further episodes of ventricular tachycardia are detected within a fixed period of time.

7. The method of claim 6 wherein fixed period of time is at least nine months.

8. The method of claim 1 wherein evaluating the likelihood that one or more circumstances will arise is performed to predict the onset of an arrhythmia and wherein controlling the recording of diagnostic data is performed to activate recording prior to the predicted onset of the arrhythmia.

9. The method of claim 8 further comprising:

determining whether the predicted arrhythmia actually occurred; and

adaptively modifying parameters employed to predict the onset of the arrhythmia based on whether an arrhythmia actually occurred so as to reduce the likelihood of unnecessarily recording diagnostic data in the absence of an arrhythmia.

10. The method of claim 8 wherein predicting the onset of an arrhythmia is performed by monitoring cardiac rhythm.

11. The method of claim 10 wherein monitoring cardiac rhythm to predict the onset of an arrhythmia comprises:

examining the morphology of heart beats and predicting the onset of an arrhythmia based on detection of a significant change in morphology.

12. The method of claim 1 wherein evaluating the likelihood that one or more circumstances will arise is performed to detect the onset of an arrhythmia and wherein controlling the recording of diagnostic data is performed to activate recording upon detection of the onset of the arrhythmia.

13. The method of claim 12 wherein monitoring cardiac rhythm to detect the onset of an arrhythmia comprises:

counting a number of beats occurring at a rate above a predetermined rate threshold and detecting the onset of an arrhythmia based on detection of a predetermined number of beats having a rate above the rate threshold.

14. The method of claim 13 wherein the predetermined number of beats having a rate above the rate threshold is in the range of one to three beats.

15. The method of claim 13 further comprising confirming that an arrhythmia actually occurred and, if the arrhythmia is not confirmed, deactivating the recording of diagnostic data.

16. The method of claim 15 further comprising, performed if the arrhythmia is not confirmed of selectively incrementing the number of beats required to trigger activation of the recording of diagnostic data.

17. The method of claim 16 the number of beats required to trigger activation of the recording of diagnostic data is selectively incremented upon detection of two consecutive episodes wherein the recording of diagnostic data was activated but the arrhythmia was not subsequently confirmed.

18. The method of claim 1 further comprising:

determining whether the circumstances wherein diagnostic medical data is to be recorded actually occurred; and

adaptively modifying parameters employed to evaluate the likelihood of such circumstances so as to reduce the risk of unnecessarily recording of diagnostic data.

19. The method of claim 1 wherein the diagnostic data to be recorded includes one or more of: intracardiac electrograms (IEGMs) and event records.

20. The method of claim 1 wherein controlling the recording of diagnostic data comprises:

activating the recording of diagnostic data in a temporary memory if such circumstances are deemed likely to occur; and

transferring data from the temporary memory to long-term memory if the circumstances actually occur.

21. A method for controlling the recording of diagnostic data within an implantable medical device for implant within a patient, the method comprising:

predicting the onset of an arrhythmia within the patient; and

controlling the recording of diagnostic data based upon such a prediction.

22. A method for controlling the recording of diagnostic data within an implantable medical device, the method comprising:

predicting the onset of circumstances wherein diagnostic medical data is to be recorded using predictive parameters;

controlling the recording of diagnostic data based upon such a prediction;

determining whether the predicted circumstances actually occurred; and

adaptively modifying the predictive parameters to improve prediction reliability.

23. A system for controlling the recording of diagnostic data within an implantable medical device, the system comprising:

a memory operative to record diagnostic medical data; and

a risk-based diagnostic data controller operative to evaluate the likelihood that circumstances will arise wherein diagnostic medical data is to be recorded and to control the storage of diagnostic data in the memory based upon such an evaluation.

24. The system of claim 23 and further comprising:

an adaptive-based diagnostic controller operative to adaptively modify parameters employed by the risk-based diagnostic data controller in making its evaluation so as to improve the reliability of such evaluations.

25. A system for controlling the recording of diagnostic data within an implantable medical device, the system comprising:

means for storing data;

means for evaluating the likelihood that circumstances will arise wherein diagnostic medical data is to be recorded; and

means for controlling the recording of diagnostic data within the means for storing based upon such an evaluation.